11. Prachi

Program Name: Prachi.java **Input File: prachi.dat**

You and Prachi are doing an experiment for your physics class. You will be given a rectangular plate that you will pour water onto, and you need to determine what the plate will look like once you pour the water. The plate will have a series of etchings that can hold water. You will be given a picture of the plate and you'll need to color in the sections that will be filled with water if you pour a continuous stream of water into a certain spot on the plate.

Input: The input will begin with an integer, `n` (`0 < n <= 1000`), denoting the number of test cases to follow. Each test case will begin with a line containing four integers, `r`, `c`, `sr`, and `sc`, denoting the number of rows and columns in the picture of the given plate, and the position on the plate you will pour water into. The picture will consist of two kinds of characters, `#` denotes an unaltered section of the plate (water cannot flow onto this), and `.` denotes an etching in the plate, where water can flow. Note: The starting point is guaranteed to be a `.` character.

Output: Output the picture of the plate, with all the spots that contain water after the experiment filled in with a `$` character. Water cannot flow diagonally, and cannot flow through any space except for a `.`

Sample input:

```
3
5 4 1 1
####
#..#
####
#..#
####
6 6 1 4
###.##
#....#
###...
#..##.
#.##..
..#...
3 8 1 5
#..#.#..
..#...##
.#...#..
```

Sample output:

```
####
#$$#
####
#..#
####
###$##
#$$$$#
###$$$
#..##$
#.##$$
..#$$$
#..#$#..
..#$$$##
.#$$$#..
```